

REVIEWS

Grigg's Botanical Survey of the "Sugar Grove Region," Ohio *

This paper is a good description of an area which is seldom mentioned in phytogeographical literature, though of exceptional interest and located in one of our most thickly settled states. An 11-page introduction treats of the geology, topography, soils and climate, and there are 37 pages on the vegetation ("ecology"), 6 on economic aspects, and 36 on the flora. The illustrations are excellent half-tones of scenery, vegetation, or single species of plants, most of them apparently never published before; but they are not dated, so that the reader can only guess at what season they were taken from the appearance of the foliage or flowers.

The area has no very definite boundaries, but is located in Fairfield and Hocking counties, a little southeast of the center of Ohio, in the unglaciated Carboniferous plateau region that extends from Pennsylvania to Alabama. (Some of the illustrations could be matched pretty closely in the coal region of Alabama.) The topography is very broken, though hardly mountainous. (Many readers will doubtless be surprised, as the reviewer was, to learn that there is such rugged topography in Ohio, for much of the surface of that state is very flat.) The soils are mostly derived from sandstone, and therefore deficient in basic materials. The nature of the soil and topography has retarded agricultural development, and thus allowed this area to remain one of the best "botanizing grounds" in the state.

The average growing season is 155 days, the average annual snowfall 25 inches, and the rainfall (from 35 to 40 inches a year) is pretty evenly distributed through the seasons, but with a slight excess in the summer months. In this last particular this locality resembles many other places with somewhat sandy soils,† and differs from most places in the Ohio valley.

* A botanical survey of the Sugar Grove region. By Robert F. Griggs. Ohio Biol. Surv. Bull. 3, or Ohio State Univ. Bull. vol. XVIII (18), no. 25, or Contr. Bot. Lab. O. S. U. no. 84. 98 pp., frontispiece, 29 numbered text-figures, and full-page map. "April" 1914 [or rather August, according to a letter from the author]. (The pages are numbered from about 247 to 340, but an examination of Bulletins 1 and 2 of the same series leaves one in some doubt as to the title of the volume to which the pagination belongs.)

† See Geol. Surv. Ala. Monog. 8: 24 (footnote). 1913.

The descriptions of vegetation cannot be adequately summarized in a brief review, but must be seen to be appreciated. For each of the habitats, about fifteen in number, the environmental factors are described in a general way, and the commoner plants listed (usually about one third of the vascular species and sometimes a few mosses and lichens), usually in approximate order of abundance or conspicuousness, but often disconnectedly, and with a somewhat arbitrary distinction between dominant and secondary species. At the beginning of most of the habitat lists the names of one or two species regarded as dominant are printed in small capitals; the rest being in italics. (The method of treatment is not very well explained in the paper itself, but some of the facts given in this paragraph have been obtained subsequently by correspondence with the author.)

Some valuable original suggestions are made about the critical environmental factors for certain species, but some of these do not seem to hold throughout the ranges of the species. For example, on pages 270 and 283 it is stated that *Betula lenta* requires a constant supply of water near the surface. But in Massachusetts, New York and Michigan it grows in ordinary "mesophytic" upland woods, and at its southern limits in the mountains of Georgia and Alabama it is chiefly confined to exposed cliffs at high elevations (often with *Kalmia latifolia*). On page 283 *Kalmia latifolia* is said to be "preëminently a sun-loving plant"; but it grows in dense shade always in Florida, often in North Carolina, and sometimes in Massachusetts. (For both of these species protection from fire is probably a more important factor than soil moisture or insolation.)

Very interesting is the suggestion on pages 283-286 and 290-292 that evergreen herbs are confined to places where they are not crowded by other plants or liable to be smothered by falling leaves. It has seemed to the reviewer, however, that such herbs are especially characteristic of soils poor in potassium and pretty well protected from fire* (this is especially manifest in the case of epiphytes, all of which seem to be evergreen†); but at the same

* See Bull. Torrey Club 38: 517. 1911; 41: 214-217. 1914.

† See Ann. N. Y. Acad. Sci. 17: 38. 1906.

time the volume of annual leaf-fall is likely to be least in the poorest soils, *ceteris paribus*,* so that the dead-leaf hypothesis is not disproved. (And epiphytes are naturally just as exempt from smothering by leaves as they are from fire and overfeeding.)

The flora is pretty rich: 972 species of vascular plants being listed. This includes quite a number which have not been seen there by botanists now living, but the mosses and lichens mentioned in the ecological part are not enumerated in the taxonomic part. Most of the species in the catalogue are not referred to any habitat, which seems an unfortunate omission in a work which is so largely ecological. On the other hand, a few of the vascular plants mentioned in the descriptions of vegetation (just how many it is difficult to determine without an index) are not mentioned in the catalogue; but such omissions may be wholly the fault of the printers.

Nearly all the species in the catalogues are given "common" names, fictitious ones being used where no bona-fide ones have been discovered. Most but not quite all of the specific names are decapitalized. Over 15 per cent. of the technical names, and a few other words, are misspelled, many of them more than once or with more than one letter wrong.

From the summary at the end of the catalogue it appears that 22.7 per cent. of the angiosperms are monocotyledons: a figure agreeing pretty well with those for other unglaciated parts of the Paleozoic region of eastern North America.†

One of the objects of a review is to point out the good and bad features for the benefit of those who may undertake similar work afterwards (and there ought to be many more papers of this sort for other parts of the world). Among the good features of the work under consideration are the satisfactory descriptions of physical features, especially climate, the excellent illustrations, the careful classification of habitats, the amount of space devoted to environmental factors, the arrangement of species in order of abundance in the habitat lists, and the accurate identifications of species (a matter with which the Ohio botanists seem to be more

* See Bull. Torrey Club 40: 399. 1913.

† See Torreya 5: 207-210. 1905.

particular than some others are). Most of the shortcomings are not peculiar to this paper by any means, but are merely manifestations of widespread modern tendencies, due largely to excessive specialization in education and a growing indifference to matters not directly in one's line; and for some of them the author can hardly be held responsible at all. Others are points which will probably be given more attention in the future than they have in the past. The principal ones are:

Using too many different serial numbers on cover or title-page, one of them Roman (a sort of notation which has outlived its usefulness).

Dating the publication falsely, and thus working an injustice to any one who may have published something similar between the alleged date and the real date.

Omitting dates from illustrations (where they are just as useful as on herbarium labels, etc.).

Carelessness in spelling and proof-reading.

Using the terms "region" and "ecology" too loosely.

Too few comparisons with other parts of the world and citations of previous literature.

Insufficient explanation of the methods of treatment.

Too little correlation of vegetation with soil.

Lack of quantitative figures for vegetation.

Assuming that species treated as native in floras of the northeastern United States must be indigenous in every part thereof, even where the habitat indicates otherwise.

Too great discrepancy between ecological and taxonomic parts, in number of species included.

Using fictitious common names, which appear to serve no useful purpose, and take up space which might be better occupied with information about habitats or other significant facts.

Decapitalizing specific names, and thus obliterating certain interesting etymological distinctions without benefiting the reader appreciably.

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Hitchcock's Text-book of Grasses*

This is one of the Rural Text-book Series, edited by Professor L. H. Bailey. The work is divided into two parts, the first treating of the economic side of the subject, the second of systematic agrostology. The first part includes ten chapters, the first chapter an introduction. Then follow chapters on: economic

* A Text-book of Grasses. With especial reference to the economic species of the United States. By A. S. Hitchcock, systematic agrostologist, U. S. Dept. of Agriculture. Pp. 1-276. Illustrated. The Macmillan Co., N. Y. 1914. Price \$1.50.